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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,522	11/05/2003	Tommy Hansen	H0610.0355/P355	9436

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EXAMINER	
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ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/700,522	HANSEN ET AL.	
	Examiner	Art Unit	
	PAUL S. HYUN	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5 and 7-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5 and 7-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed by Applicant on September 23, 2009 has been acknowledged. Claims 1, 3-5 and 7-10 remain pending. Applicant amended claim 1.

Applicant's arguments with respect to the claims have been fully considered and they're persuasive. The Examiner agrees with Applicant that there is no motivation to combine the teachings of Foster et al. and Nishizawa et al. Consequently, the rejections cited in the previous Office action have been withdrawn.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim **1** is rejected 35 U.S.C. 103(a) as being unpatentable over Foster et al. (US 2002/0068025 A1) in view of Öttle (US 4,160,010) and Castor et al. (US 4,132,743).

Foster et al. disclose a reactor for oxidizing hydrocarbons produced by combustion engines (see [0002] and Fig. 9). The reactor is suitable for conducting reactions at 1,000 degrees Celsius (see [0040]). The reactor comprises an inlet, an outlet, and a metallic basket having an inlet and an outlet 92 wherein the inlet of the basket coincides with the inlet of the reactor in a gas-tight manner. The basket partially surrounds a catalyst 10 (e.g. rhodium, nickel) (see [0042]) and the outlet 92 of the basket comprises a piece that extends in a direction transverse to the reactor chamber to provide support for the catalyst bed 10. The reactor disclosed by Foster et al. differs from the claimed invention in that Foster et al. do not disclose a ceramic coating. In

addition, the basket disclosed by Foster et al. does not completely surround the sidewalls of the catalyst.

With respect to the basket, Öttle discloses a reactor for conducting chemical reactions (see Figs. 1 and 2). The reactor comprises a reactor shell 12 comprising an inlet and an outlet, a catalyst bed 22, and an impermeable basket in the form of metallic foil 30 that surrounds the sidewalls of the catalyst bed. The foil 30 ensures that the entire sample passes through the catalyst bed by preventing the sample gas from circumventing the catalyst bed (see claim 1). In light of the disclosure of Öttle, it would have been obvious to one of ordinary skill in the art to extend the basket disclosed by Foster et al. such that it completely surrounds the sidewalls of the catalyst.

With respect to the ceramic coating, Castor et al. disclose a catalytic converter comprising a metallic shell housing a catalyst bed wherein the inner surface of the shell is coated with an inert ceramic medium to prevent undesired reactions between the shell and the catalyst (see Abstract). In light of the disclosure of Castor et al., it would have been obvious to one of ordinary skill in the art to coat the inner surface of the basket disclosed by Foster et al. with inert ceramic.

Claims **3-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al. in view of Öttle and Castor et al. as applied to claim 1 above, and further in view of Mentschel (US 4,018,573).

None of Foster et al., Öttle and Castor et al. disclose a heating means to maintain a high reaction temperature inside the reactor.

Mentschel discloses a reactor comprising an electric heater for controlling the temperature of the reaction within the reactor (see lines 20-35, col. 7). In light of the disclosure of Mentschel, it would have been obvious to one of ordinary skill in the art to provide a heater around the foil and ceramic coating of the modified Foster et al. reactor so that a desired reaction temperature can be maintained within the modified reactor.

Claims **7-9** are rejected 35 U.S.C. 103(a) as being unpatentable over Foster et al. in view of Öttle, Castor et al. and Fujitani et al. (US 4,109,461).

As discussed above, Foster et al., Öttle and Castor et al. disclose catalytic converters for oxidizing hydrocarbons. However, none of the references explicitly disclose a method of partially oxidizing hydrocarbons.

Fujitani et al. disclose a reactor for partially oxidizing the hydrocarbon products of an internal combustion engine to more environmentally friendly gases. The method comprises the step of feeding the hydrocarbons to a reactor comprising a catalyst (e.g. rhodium, nickel [see lines 2-3, col. 3]) and conducting a reaction in the temperature range between 800 to 1200 degrees Celsius (see Abstract). In light of the disclosure of Fujitani et al., it would have been obvious to one of ordinary skill in the art to use the modified Foster et al. reactor to partially oxidize hydrocarbons.

Claim **10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al. in view of Öttle, Castor et al. and Fujitani et al. as applied to claims 7-9 above, and further in view of Werges (US 3,929,421).

Even though Foster et al. disclose a the use of flanges to support the catalyst bed, none of Foster et al., Öttle, Castor et al. and Fujitani et al. disclose a grid to support the catalyst bed.

Werges discloses a reactor comprising a bed of catalyst axially supported by a grid 63 (see Fig. 7). In light of the disclosure of Werges, it would have been obvious to one of ordinary skill in the art to substitute the flanges of the modified Foster et al. reactor with a grid to provide the modified reactor with a means that supports the entire catalyst bed.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL S. HYUN whose telephone number is (571)272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul S Hyun/
Examiner, Art Unit 1797

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797